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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
DAGER, JONATHAN M	

ART UNIT	PAPER NUMBER
3663	

NOTIFICATION DATE	DELIVERY MODE
03/12/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)
	10/534,982	TAFFIN, CHRISTIAN
	Examiner	Art Unit
	JONATHAN M. DAGER	3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 30 November 2009.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) 2 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 and 3-15 is/are rejected.

7)☒ Claim(s) 9 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 November 2009 has been entered.

Response to Arguments

2. Applicant's arguments, see pages 6-9, filed 21 October 2009, with respect to the rejection of claims 1 and 8 under 35 U.S.C. 102(b)/103(a) have been fully considered and are persuasive due to amendment. Therefore, the rejection of claims 1 and 8 under 35 U.S.C. 102(b)/103(a)has been withdrawn.

Subsequently, the prior art rejections of all claims dependent therefrom are withdrawn.

However, upon further consideration, new grounds of rejection are warranted (see below).

Claim Objections

3. Claim 9 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the

claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 9 details all components already outlined in base claim 8 (an engine, AT, and control of the AT as a function of base claim 8). Thus, the claim does not further limit said parent claim.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4a. Claims 1-15 are rejected under 35 U.S.C. 103(a) as obvious in view of Bellinger (US 2001/0016795), in view of Katayama (US 5,479,349).

Regarding claims 1, 7-10, and 15, Bellinger discloses a vehicle deceleration invention in which the vehicle includes engine 14 is operatively connected to a transmission 16 which is, in turn, operatively connected to a propeller shaft, or tailshaft, 18, wherein the engine 14 drives tailshaft 18 via any of a number of selectable gear ratios of transmission 16 as is known in the art. As it relates to the present invention, transmission 16 may be a fully automatic or semi-automatic transmission having a number of automatically selectable gear ratios (para 0027).

Thus, Bellinger discloses a method for control of an automatic transmission of a vehicle provided with an engine that drives a transmission.

Bellinger discloses that the vehicle may include an inclinometer (not shown) or other known device operable to detect the slope or grade of the road being traveled, and provide a slope signal to control computer 12 corresponding thereto. In this embodiment, control computer

12 is operable to determine that a runaway vehicle condition exists if the slope signal indicates a negative grade greater than some predefined grade or slope value (para 0044).

Thus, the control computer is configured for detecting a downhill situation of the vehicle on which the vehicle is traveling is greater than a predetermined threshold.

Bellinger discloses wherein the torque request signal is typically provided via manual actuation of an accelerator pedal (not shown) under manual fueling control or via a desired speed setting of cruise control unit 56 under cruise control operation, to produce one or more fueling signals on signal path 40. The fuel system 38 is responsive to the one or more fueling signals to supply fuel to engine 14 as is known in the art (para 0031).

Thus, it is disclosed determining the power demand of the engine by the electronic unit.

Bellinger discloses that System 300 differs from system 10 of FIG. 1 in two respects. First, outputs OUT2, OUT3 and OUT4 of control computer 12 have been relabeled as OUT1, OUT2 and OUT3 respectively. Secondly, the service brakes 302 of system 300 need not be electronically controllable as were service brakes 52 of system 10. As it relates to the present invention, service brakes 302 instead preferably include a mechanism 304 for determining a desired braking force of service brakes 302, wherein mechanism 304 is electrically connected to input IN8 of control computer 12 via signal path 306. In one embodiment, mechanism 304 is a service brake pedal deflection sensor of known construction operable to produce a service brake force signal on signal path 306 indicative of service brake pedal deflection. In this embodiment, the indication of desired braking force of service brakes 302 is preferably provided as a percentage of service brake pedal deflection by sensor 304. Sensor 304 is preferably calibrated in this embodiment to include a deadband, as is known in the art, such that the service brake pedal

must be deflected by at least a predefined amount before sensor 304 registers service brake pedal movement. Alternatively, mechanism 304 may include a service brake pedal validation switch, wherein the switch is activated when the service brake pedal travels a specified distance from its rest position. Activation of this switch provides control computer 12 with an indication that the service brakes 302 have been activated (para 0072).

Thus, it is disclosed the electronic unit determining whether or not braking via a brake pedal is absent.

Bellinger discloses that control computer may be responsive to GPS information provided thereto by GPS receiver 76 to determine whether a runaway vehicle condition exists. In this embodiment, control computer 12 is operable to compare the present GPS coordinates (corresponding to present vehicle location) with GPS coordinates stored in memory 15, or provided to control computer from some remote source via a suitable wireless link (e.g. cellular phone link, RF link, etc.), and make a determination based on this comparison as to whether the vehicle is approaching or currently traversing a downhill grade that has a negative grade sufficiently large to result in a potential runaway vehicle condition. If so, control computer 12 is operable to determine at step 104 that a potential runaway vehicle condition exists. Alternatively, control computer 12 may be operable in this embodiment to monitor altitudinal information provided thereto by GPS receiver 76, and to determine that a potential runaway vehicle condition exists if the altitude of the vehicle has changed more than some predefined amount over a recent time interval (para 0045).

Thus, it is disclosed that the vehicle can sense an oncoming downhill situation, as well as a current downhill situation.

Bellinger discloses that if control computer 12 determines at step 104 that a potential runaway vehicle condition does exist, algorithm execution continues at step 106 where control computer 12 determines a target engine or vehicle speed TS for traversing the downhill grade. In one embodiment, control computer 12 is operable to determine TS as a learned engine or vehicle speed; i.e. an average engine or vehicle speed for some time period or distance prior to determining that a potential runaway vehicle condition exists. For example, control computer 12 may be operable to determine TS in this embodiment as an average vehicle speed for 10 seconds prior to executing step 106 (para 0046).

In yet another alternative embodiment, control computer 12 is operable to determine TS as a function of present vehicle location. In this embodiment, memory 15 has stored therein, or has access to, target speed values corresponding to vehicle location. Control computer 12 is accordingly operable at step 104 to determine present vehicle location, as described hereinabove, and determine from memory 15 or from information provided thereto from a remote source a target speed value corresponding to present vehicle location (para 0048).

Thus, it is disclosed that a fixed vehicle speed for traversing a downhill grade, and storing this value for later comparison.

Bellinger also discloses that in an alternate embodiment, control computer 12 is operable to determine TS as a driver requested speed provided thereto via cruise control unit 56, interface/monitor 70 or other operator input means. For example, control computer 12 may be operable to determine TS as the set speed of cruise control unit 56 if cruise control unit 56 is active (para 0047).

Thus, the target speed for the hill may be set by the cruise control and stored for later use.

Bellinger discloses that the algorithm execution continues at step 108 where control computer 12 is operable to control wastegate 34 to thereby set turbocharger boost pressure at its maximum allowable value and to control engine brake unit 42 to provide for maximum engine retarding torque. As described with respect to FIGS. 2 and 3, control computer 12 is thus operable at step 108 to provide for an aggressive engine braking strategy by controlling both wastegate 34 and engine brake unit 42 to produce a maximum engine retarding torque. Following step 108, control computer 12 is operable at step 110 to monitor current engine or vehicle speed (CS). Thereafter at step 112, control computer 12 is operable to determine whether CS is increasing. If so, control computer is operable at step 114 to activate the service brakes 52, at step 116 to perform an automatic downshift to a numerically lower transmission gear, in a well known manner, at step 118 to again monitor CS, and at step 120 to determine whether if CS is still increasing. Preferably, anytime control computer 12 is operable to activate the service brakes 52, such as at step 114 of algorithm 100, control computer 12 is operable to activate the service brakes 52 only to the extent necessary to slow the vehicle to the highest vehicle speed necessary to conduct an automatic downshift. In this manner, service brake wear is minimized and engine speed is returned, after the downshift, to an engine speed (typically referred to as governed speed) at which the retarding capacity of engine brake unit 42 is most efficient. If, at step 120 control computer 12 determines that CS is still increasing algorithm 100 loops back to step 114 for another automatic downshift sequence. If not, and if CS is not increasing at step 112, algorithm execution continues therefrom at step 122 (para 0050).

Thus, before and/or during the downhill scenario, the system and method of Bellinger compares the current speed with the target speed; if a deviation exists, the system and method

discloses choosing a transmission ratio such that the engine absorbs energy, comprising instructing the transmission to initiate a downshift.

Bellinger does not explicitly disclose the embodiment wherein if pressure is applied to the accelerator/brake pedal, the automatic algorithm is terminated. Bellinger does disclose that the indication of desired braking force of service brakes 302 is preferably provided as a percentage of service brake pedal deflection by sensor 304. Sensor 304 is preferably calibrated in this embodiment to include a deadband, as is known in the art, such that the service brake pedal must be deflected by at least a predefined amount before sensor 304 registers service brake pedal movement. Alternatively, mechanism 304 may include a service brake pedal validation switch, wherein the switch is activated when the service brake pedal travels a specified distance from its rest position. Activation of this switch provides control computer 12 with an indication that the service brakes 302 have been activated (para 0072).

In the above citation, brake and accelerator pedal pressure operation can be sensed by the control computer. It is also noted that cruise control operation is sensed by the control computer.

Katayama teaches that in a conventional cruise control apparatus for a vehicle, a set switch 1 is adapted to be manipulated by the driver of the vehicle to start cruise control. A cancellation switch 2 is turned on in response to the application of the brakes by the driver to cancel the cruise control (column 1 lines 15-20).

Thus, it is taught by Katayama ending the cruise control algorithm if deflection is detected at the brake or accelerator pedal, thus further teaching not identifying a downhill travel situation when braking is being applied via brake pedal.

Bellinger has disclosed a base invention which is capable of all functions of the claimed embodiments, including detecting an activation of cruise control, and automatic deceleration control in a vehicle in response to the traveling situation. Where Bellinger could be deficient, with respect to claim 1 is that Bellinger does not explicitly disclose the known facet of cruise control wherein insuring deflection of the pedals is below a predetermined threshold. Katayama cures the deficiency.

Thus, since both inventions both disclose/teach similar elements and usage, it would have been obvious to one of ordinary skill in the art at the time of the invention to simply substitute one apparatus into the other, or at least combine their respective elements, to achieve no more than the predictable result of a deactivation of deceleration control when pressure is applied to the brake pedal.

Combining prior art elements according to known methods to yield predictable results is a rationale to support a conclusion of obviousness. See MPEP 2143(A).

Simple substitution of one known element for another to obtain predictable results will support a conclusion of obviousness. See MPEP 2143 (B).

Regarding claims 3, 4, 11, and 12, Bellinger discloses that the algorithm execution continues at step 108 where control computer 12 is operable to control wastegate 34 to thereby set turbocharger boost pressure at its maximum allowable value and to control engine brake unit 42 to provide for maximum engine retarding torque. As described with respect to FIGS. 2 and 3, control computer 12 is thus operable at step 108 to provide for an aggressive engine braking

strategy by controlling both wastegate 34 and engine brake unit 42 to produce a maximum engine retarding torque. Following step 108, control computer 12 is operable at step 110 to monitor current engine or vehicle speed (CS). Thereafter at step 112, control computer 12 is operable to determine whether CS is increasing. If so, control computer is operable at step 114 to activate the service brakes 52, at step 116 to perform an automatic downshift to a numerically lower transmission gear, in a well known manner, at step 118 to again monitor CS, and at step 120 to determine whether if CS is still increasing. Preferably, anytime control computer 12 is operable to activate the service brakes 52, such as at step 114 of algorithm 100, control computer 12 is operable to activate the service brakes 52 only to the extent necessary to slow the vehicle to the highest vehicle speed necessary to conduct an automatic downshift. In this manner, service brake wear is minimized and engine speed is returned, after the downshift, to an engine speed (typically referred to as governed speed) at which the retarding capacity of engine brake unit 42 is most efficient. If, at step 120 control computer 12 determines that CS is still increasing algorithm 100 loops back to step 114 for another automatic downshift sequence. If not, and if CS is not increasing at step 112, algorithm execution continues therefrom at step 122 (para 0050).

Bellinger discloses a plot of engine retarding torque vs. engine speed is shown illustrating relative engine retarding torque capacities of an engine brake unit 42 for a six cylinder diesel engine, wherein the example brake unit 42 has three brake capacity settings; i.e. a "high" engine brake setting EB3, as illustrated by retarding torque function 80, a "medium" engine brake setting EB2, as illustrated by retarding torque function 82, and a "low" engine brake setting EB1, as illustrated by retarding torque function 84. As is typical with engine brake units, engine brake settings EB1-EB3 are somewhat linear below an engine speed ES.sub.TH, and become more

non-linear above ES.sub.TH. The non-linear nature of settings EB1-EB3 illustrate that engine brake unit 42 is more efficient at higher engine speeds, as is known in the art. It is to be understood that the engine brake embodiment shown in FIG. 2 illustrates only one preferred embodiment of engine brake unit 42, and that the present invention contemplates embodiments of engine brake unit 42 having any number of discrete engine brake settings EB1-EB.sub.j, wherein j may be any integer including zero (para 0040).

Thus, it is disclosed verifying that the engine of the vehicle is capable of handling the energy absorption capacity necessary for decelerating the vehicle, and that the energy absorption is governed by engine speed.

Regarding claim 5 and 14, and in addition to that which is cited above, Bellinger discloses that control computer 12 may be operable at step 210 to determine a steepness or slope of the negative grade in accordance with any of the techniques described hereinabove, wherein control computer 12 is subsequently operable at steps 212-216 to determine a desired deceleration rate based on the steepness of the negative grade rather than on the speed error shown in step 210 (para 0067).

Regarding claim 6, Bellinger and Katayama, as combined above, teaches that it is further determined whether the speed deviation .epsilon. is less than zero. If .epsilon.<0, it is further determined in Step S22 whether the absolute value of the speed deviation .epsilon. is greater than a predetermined value .epsilon.a (e.g., 8 km/h) at time t2, as shown in FIG. 7. If so (.vertline..epsilon..vertline.>.epsilon.a), then in Step S23, an integration value In, which will be

described later in detail, is initially set, at time t2, to an initial value Ia corresponding to a predetermined opening of the throttle valve 29 below which the transmission is down-shifted (see Katayama at column 8 lines 19-27).

Regarding claim 13, Bellinger discloses that the system 10 includes a number of sensors and other electronic components operable to provide control computer 12 with operational data related to engine 14 and/or the vehicle carrying engine 14. For example, engine 14 includes an engine speed sensor 20 (ESS) electrically connected to input IN1 of control computer 12 via signal path 22. In one embodiment, ESS 20 is a Hall effect sensor, although the present invention contemplates that sensor 20 may be a variable reluctance or other known sensor or sensing system operable to determine engine rotational speed and provide an engine speed signal corresponding thereto on signal path 22 (para 0028).

Thus, it is disclosed an engine controller configured to measure the engine speed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. DAGER whose telephone number is (571)270-1332. The examiner can normally be reached on 0830-1800 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JD
08 March 2010

/Jack W. Keith/
Supervisory Patent Examiner, Art Unit 3663